

137—Cragosen-Rock outcrop-Carmody complex, hilly. This map unit is on hills and ridges. Slopes are 3 to 60 percent. Areas are irregular in shape and are 40 to 320 acres in size. The native vegetation is mainly grasses and shrubs. Elevation is 6,000 to 7,500 feet. The annual precipitation is 10 to 14 inches, the average annual air temperature is 39 to 45 degrees F, and the frost-free period is 90 to 110 days.

This unit is about 45 percent Cragosen gravelly loam, 5 to 60 percent slopes; 25 percent Rock outcrop; and 15 percent Carmody sandy loam, 3 to 40 percent slopes. The Cragosen soil is on the summit and shoulder slopes of hills and ridges, the Rock outcrop is on the summit of hills and ridges, and the Carmody soil is on the side slopes of hills and ridges. The components of this unit occur as areas so intricately intermingled that mapping them separately was not practical at the scale used.

Included in this unit are small areas of Blackhall fine sandy loam, 5 to 40 percent slopes; Blazon clay loam, 3 to 40 percent slopes; and Cushool sandy loam, 2 to 25 percent slopes. Also included are small areas of Coalmont fine sandy loam, 2 to 20 percent slopes, and Bosler fine sandy loam, 1 to 8 percent slopes, on fan aprons and terraces. Included areas make up about 15 percent of the total acreage. The percentage varies from one area to another.

The Cragosen soil is shallow and well drained. It formed in residuum and slope alluvium derived dominantly from sandstone and conglomerate. Typically, 40 percent of the surface is covered with gravel. The surface layer is dark yellowish brown gravelly loam 4 inches thick. The subsoil is light yellowish brown very gravelly sandy loam 15 inches thick. Soft sandstone bedrock is at a depth of about 19 inches.

Permeability is moderate in the Cragosen soil. Available water capacity is very low. The effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is severe. The hazard of wind erosion is moderate.

The Rock outcrop occurs as exposures of soft sandstone and conglomerate.

The Carmody soil is moderately deep and well drained. It formed in residuum and slope alluvium derived dominantly from sandstone. Typically, 30 percent of the surface is covered with gravel. The surface layer is pale brown sandy loam 1 inch thick. The underlying material is pale brown and very pale brown very fine sandy loam 34 inches thick. Soft sandstone bedrock is at a depth of about 35 inches.

Permeability is moderate in the Carmody soil. Available water capacity is low. The effective rooting depth is 20 to 40 inches. Runoff is rapid, and the hazard of water erosion is severe. The hazard of wind erosion also is severe.

This unit is used mainly as rangeland. It also is used for wildlife habitat.

The potential plant community on the Cragosen soil is mainly 15 to 25 percent bluebunch wheatgrass, 15 to 25 percent western wheatgrass, 5 to 10 percent mutton bluegrass, and 5 to 10 percent big sagebrush. As the range condition deteriorates, threadleaf sedge and big sagebrush increase in abundance. As the range condition further deteriorates, annual grasses and weeds invade. The potential plant community produces about 900 pounds of air-dry vegetation per acre in normal years. Production ranges from 1,200 pounds in favorable years to 700 pounds in unfavorable years.

The potential plant community on the Carmody soil is mainly 20 to 30 percent needleandthread, 15 to 25 percent rhizomatous wheatgrasses, 10 to 20 percent Indian ricegrass, and 5 to 10 percent silver sagebrush. As the range condition deteriorates, threadleaf sedge and silver sagebrush increase in abundance. As the range condition further deteriorates, annual grasses and weeds invade. The potential plant community produces about 1,200 pounds of air-dry vegetation per acre in normal years. Production ranges from 1,500 pounds in favorable years to 700 pounds in unfavorable years.

The production of vegetation suitable for grazing is limited by low precipitation, droughtiness, and a short growing season. It also is limited by the restricted rooting depth in the Cragosen soil. Proper grazing use and deferred grazing are needed to maintain an adequate plant cover and to control wind erosion and water erosion. Additional management practices may be needed on rangeland that is in an undesirable condition. These practices include brush control, critical area planting, fencing, watering facilities, and wildlife habitat management. Range seeding may be needed if the amount of desirable vegetation is not sufficient for natural seeding to occur. Grazing should be delayed until the soils are firm and the more desirable forage plants have achieved enough growth to withstand grazing pressure. Access by livestock is limited in the steeper areas. As a result, the less sloping areas tend to be overgrazed.

The Cragosen soil is in capability subclass VII_s, nonirrigated. It is in the Shallow Loamy, 10- to 14-inch precipitation, High Plains Southeast range site. The Rock outcrop is in capability class VIII, nonirrigated. It is not assigned to a range site. The Carmody soil is in capability subclass VI_e, nonirrigated. It is in the Sandy, 10- to 14-inch precipitation, High Plains Southeast range site.

Cragosen Series

The Cragosen series consists of shallow, well drained soils on hills, terrace escarpments, and ridges. These soils formed in residuum and slope alluvium derived dominantly from sandstone and conglomerate. Slopes are 5 to 60 percent. Elevation is 6,000 to 7,500 feet. The annual precipitation is 10 to 14 inches, the average annual air temperature is 39 to 45 degrees F, and the frost-free period is 90 to 110 days.

Typical pedon of a Cragosen gravelly loam that has a slope of 20 percent, in an area of Cragosen-Carmody-Blazon complex, hilly; about 1,100 feet south and 3,200 feet west of the northeast corner of sec. 16, T. 33 N., R. 99 W.

A—0 to 2 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 5/3) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; about 20 percent gravel and 5 percent cobbles; gravel and cobbles covering about 30 percent of the surface; strongly effervescent; disseminated carbonates; moderately alkaline; abrupt smooth boundary.

Bw—2 to 6 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 5/3) moist; weak fine subangular blocky structure parting to moderate very fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; about 25 percent gravel and 5 percent cobbles; strongly effervescent; disseminated carbonates; moderately alkaline; clear wavy boundary.

Bk—6 to 12 inches; light gray (2.5Y 7/2) very gravelly sandy loam, light brownish gray (2.5Y 6/2) moist; hard, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; about 40 percent gravel and 5 percent cobbles; strongly effervescent; disseminated carbonates and common large seams and soft masses of carbonates; moderately alkaline; abrupt wavy boundary.

Cr—12 inches; soft sandstone.

About 30 to 60 percent of the surface is covered with gravel and cobbles. The depth to bedrock ranges from 10 to 20 inches. The control section is 25 to 45 percent gravel, 5 to 20 percent cobbles, and 10 to 18 percent clay.

The A and Bw horizons are mildly alkaline or moderately alkaline. The A horizon has hue of 10YR or 7.5YR. The Bw horizon is 25 to 60 percent rock fragments. The Bk horizon has hue of 5Y to 10YR. It is very gravelly loam or very gravelly sandy loam. It is 35 to 60 percent rock fragments. It mildly alkaline to strongly alkaline.

Carmody Series

The Carmody series consists of moderately deep, well drained soils on hills, ridges, and knobs. These soils formed in residuum and slope alluvium derived dominantly from sandstone. Slopes are 2 to 40 percent. Elevation is 5,300 to 7,500 feet. The annual precipitation is 10 to 14 inches, the average annual air temperature is 39 to 45 degrees F, and the frost-free period is 90 to 110 days.

Typical pedon of a Carmody fine sandy loam that has a slope of 4 percent, in an area of Blackhall-Carmody association, hilly; about 1,800 feet south and 1,150 feet east of the northwest corner of sec. 30, T. 34 N., R. 95 W.

A—0 to 4 inches; brown (10YR 5/3) fine sandy loam, yellowish brown (10YR 5/4) moist; weak fine granular structure; loose, nonsticky and nonplastic; many very fine and fine roots; slightly effervescent; disseminated carbonates; moderately alkaline; abrupt smooth boundary.

C1—4 to 13 inches; pale brown (10YR 6/3) very fine sandy loam, yellowish brown (10YR 5/4) moist; weak medium prismatic structure parting to weak medium subangular blocky; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; slightly effervescent; disseminated carbonates; moderately alkaline; clear wavy boundary.

C2—13 to 24 inches; light yellowish brown (2.5Y 6/4) very fine sandy loam, light olive brown (2.5Y 5/4) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; strongly effervescent; disseminated carbonates; moderately alkaline; gradual wavy boundary.

Cr—24 inches; soft sandstone.

The depth to bedrock ranges from 20 to 40 inches. The control section is 10 to 18 percent clay. The C horizon has hue of 2.5Y or 10YR. It is sandy loam, fine sandy loam, or very fine sandy loam. It is moderately alkaline or strongly alkaline.